

Specifications different types of HyMove hydrogen fuel cell modules

April 2020

Modules	H2FC-30kW-mod-typ1.2	H2FC-45kW-mod-typ3	H2FC-60kW-mod-typ4 (ready end 2020)
Output: Peak Power	33 kW	48 kW	72 kW
Nominal power	30 kW	45 kW	60 kW
Voltage	160-300VDC	200-360VDC	200-360 VDC
Fuel efficiency	52% @ nominal power 60% @ 50% power	>50% @ nominal power 58% @ 50% power	>50% @ nominal power 56% @ 50% power
External connections	<ul style="list-style-type: none"> 160-300VDC (out) 24VDC (in) Air pump power (in) CANBUS J1939 (in/out) Emergency stop (in/out) Air (in/out) Coolant (in/out) Hydrogen (in) 10BAR 	<ul style="list-style-type: none"> 200-360VDC (out) 24VDC (in) 600-700VDC in (for inverter air pump) CANBUS J1939 (in/out) Emergency stop (in/out) Air (in/out) Coolant (in/out) Hydrogen (in) 10BAR 	<ul style="list-style-type: none"> 200-360 VDC (out) 24VDC (in) 600-700 VDC in (for inverter air pump) CANBUS J1939 (in/out) Emergency stop (in/out) Air (in/out) Coolant (in/out) Hydrogen (in) 10BAR
Operating temperature	60-65 °C	60-65 °C	60-65°C
Ambient temperature	-30°C to +40 °C At temperatures below 0 °C, the system keeps itself at 5 °C by electric heater connected to the 24VDC in.	-30°C to + 40°C At temperatures below 0°C, the system keeps itself at 5°C by electric heater connected to the 24VDC in.	-30°C to +40°C At temperatures below 0°C, the system keeps itself at 5°C by electric heater connected to the 24VDC in.
Assembly	The module is built in a heavy duty assembly frame.	The module is built in a heavy duty assembly frame.	The module is built into a heavy duty assembly frame.
Frame dimensions L x W x H	1397 x 804 x 542,5 mm	1397 x 804 x 542,5 mm	1597 x 804 x 542,5 mm
Heavy duty frame weight	220 kg	220 kg	220 kg
Module weight (excl. frame)	200 kg Including air sub system Including internal cooling	250 kg Including air sub system Including internal cooling	270 kg Including air sub system Including internal cooling
Cooling	Primary cooling: internally closed cooling circuit, connected by heat exchanger with secondary cooling circuit. Coolant-in temperature max 45°C	Primary cooling: internally closed cooling circuit, connected by heat exchanger with secondary cooling circuit. Coolant-in temperature max 45°C	Primary cooling: internally closed cooling circuit, connected by heat exchanger with secondary cooling circuit. Coolant-in temperature max 45°C
Communication interfacing	CAN J1939	CAN J1939	CAN J1939
Durability (output decay < 15%)	Expect: 25.000 – 30.000 hrs Warranted: 15.000 hrs	Expect: 20.000 – 25.000 hrs Warranted: 15.000 hrs	Expectation: to be decided Warranted: to be decided
Refurbishment	When the system has a decay of 15% or more it can be refurbished.	When the system has a decay of 15% or more it can be refurbished.	When the system has a decay of 15% or more it can be refurbished.
Compliance	ECE 79/2009 ECE 406/2010 R100 R10	ECE 79/2009 ECE 406/2010 R100 R10	ECE 79/2009 ECE 406/2010 R100 R10